



ProPlant

Advanced maintenance tools that ensure food safety

At the Siemer Milling Company, a feeling for quality and a sense of responsibility are deeply ingrained in the company's DNA. Owned in part by the Siemer family and in part by the employees, the USA based milling company can look back on over 138 years of history. Operating in three locations – in Teutopolis, Illinois, Hopkinsville, Kentucky and West Harrison, Indiana – today it employs 170 people and produces 750,000 tons of quality processed wheat products such as flour, wheat bran and wheat germ every year.

In order to ensure the highest standards, the company implements stringent quality and safety policies. The business also operates a test kitchen to further support its work.

“Quality and safety are at the very core of everything we do.

Our customers expect it, and so do their customers along the value chain down to the end-consumer,” says Sunil Maheshwari, Vice President of Siemer Specialty Ingredients and West Harrison Plant Manager, Siemer Milling Company.

Guaranteeing food safety in a complex business

In order to produce to the highest standards, machines need to run smoothly. The sophisticated equipment at each of the company's milling plants needs continuous calibration to correctly and efficiently process over 750,000 tons of locally grown wheat annually.

This can only be achieved with rigid maintenance discipline and the necessary expertise. In the best case, machines run efficiently without costly breakdowns and essential parts are replaced as needed.

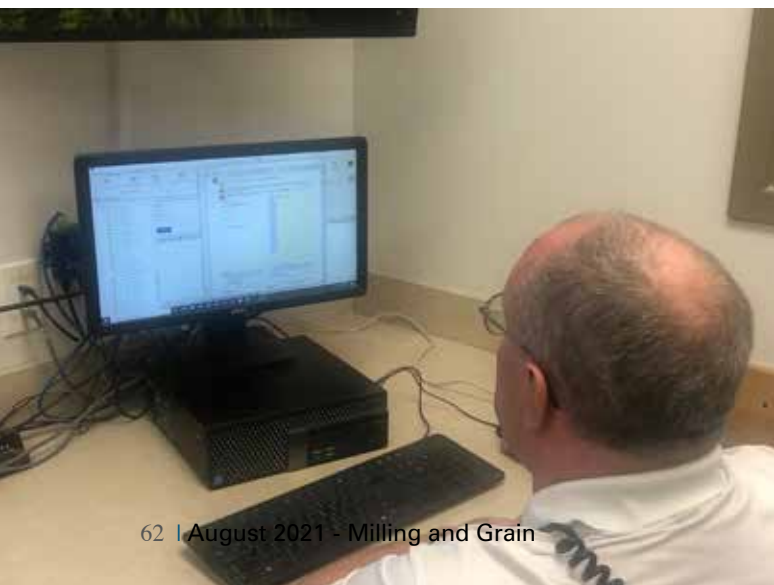
“As a preventative measure we shut down once a week for a few hours to assess any problems. When it gets really busy during harvest time, we shut down twice a month.

“All of our flour is made to order, and a very tight schedule is maintained between production and shipment. Every load is processed and shipped out as quickly as possible. Unscheduled disruptions can therefore have a very negative effect on the entire process flow,” says Mr Maheshwari.

Food safety is, however, the main concern. With increasing market pressure and margins becoming tighter, optimal maintenance helps to improve the bottom line. Maintenance has always been a constant in the milling business. As a benchmark, around two to five percent of the value of the installed assets is dedicated to it.

The evolution of maintenance

Maintenance has evolved for many businesses over the past few years. New technology – IT in particular – has enabled operators



to optimise maintenance tasks and take the entire process to the next level. At the same time, expectations have also changed, those of both customers and official food safety auditors.

Today, comprehensive paper trails are required that cover all aspects of the processes determining food quality and safety.

“Food safety audits have become tougher and tougher all over the world - and quite rightly so. Safety is of critical importance to our business,” says Mr Maheshwari. “If a machine is maintained, we want to know every detail about the procedure: who was in charge, what was done, which parts were examined and replaced.

“All calibrations undertaken in a mill for optimal performance require similar diligent procedures,” he adds.

Keeping on top of maintenance

With scores of machines made by different manufacturers, each with thousands of parts, it is a mammoth task to keep on top of the maintenance process. That is why, in 2015, the company investigated purchasing specialised software to assist in this operation.

After researching the market, Siemer Milling Company opted for Bühler’s ProPlant software. The key advantage that it offered was its ability to cover the entire business – each department and each different type and make of machinery.

The ProPlant Service Management System is a software that enables operators to organise the maintenance schedule of a plant. It can be deployed for plants operating Bühler and non-Bühler equipment.

It merges complex data from various sources and delivers the information that operators need to manage maintenance and repairs. Before software like ProPlant was available, maintenance tasks were noted and tracked with pen and paper resulting in a very inefficient, time-consuming and error-prone process.



“Ensuring food safety is a major concern for farmers, producers and processors. In wheat production, mills such as Siemer Milling Company are regularly subjected to close scrutiny during audits carried out by customers and agencies. Having adequate processes and the right software to track and record maintenance work carried out on their machinery takes the pain out of this essential task”

With ProPlant, generating a job card for each task and then generating a list of all the work that has to be done is simple. The software also provides a record of every check or change made to each piece of machinery.

The software consists of four modules, which are Installation Asset Data Management, Preventive and Corrective Maintenance, Inventory Management, and Document Management. The multiple plant installation securely connects operations in different locations via the Internet to a management computer at any location. Data is safely backed up on a backup server.

Beyond the standard set-up, changes can be made to adapt the system to each customer's requirements. The system is highly customisable to suit the individual needs of customers whether they use Bühler or non-Bühler equipment.

Some customers add facility management to the system. For example, a job card can be created to schedule changing the office air conditioning filters.

Achieving consistently high audit scores

The benefits of ProPlant are significant in terms of increased plant availability but also in terms of how customer and agency audits are run. Customers and official food safety agencies have a vested interest in ensuring that food processing companies adhere to standards.

Once a year, Siemer Milling Company opens its doors to BRC (British Retail Consortium) auditors. In between these visits the company's national and international customers also send their own teams of experts to thoroughly scrutinise the milling operation.

Audits are an essential part of safeguarding quality within the milling industry. Achieving a good rating is important. "Customers demand excellent ratings as they depend on safe and high-quality produce to keep up their own standards," says Mr Maheshwari, whilst adding that "we are proud to have prime ratings at Siemer Milling Company."

The BRC auditing process used to take two days, but every year new areas have been added. Currently an audit takes over two days. All the managers are involved as well as the food safety team – a significant effort in terms of time and manpower. Customer audits are shorter but still take a whole day.

"The deployment of ProPlant has made a huge difference to how we conduct audits. The visiting auditors were visibly impressed and complimented us on the system. It significantly speeds up the entire auditing process," says Mr Maheshwari.

ProPlant displays the complete history of an individual machine or processing line making the audit more transparent and easier for auditors and in-house teams alike.

"It's very user-friendly, with just three clicks all the relevant information is there, right on the screen before us," says Mr Maheshwari. "Auditors require a complete and detailed picture. With ProPlant we can prove that we not only talk the talk but

walk the walk.

"Operating with such detail and seamless control over every aspect of our processes without software as potent as ProPlant would be unthinkable."

Pushing for further digitalisation

Siemer Milling Company currently uses ProPlant for its milling equipment tasks and auditing requirements as well as for calibrating its milling scales. Some of the equipment is from Bühler, other machinery is from other suppliers. Regardless of the manufacturer, ProPlant is able to track all sanitation tasks and documentation as well as employee time spent on specified tasks.

"Pressure to implement the system successfully was strong as we urgently needed to make our lives easier. And we succeeded. However, there are still areas which haven't been integrated into the system.

"There are just so many ideas where we can make improvements," says Mr Maheshwari. This is the next step to further improve efficiency and utilise the system's full potential, for example, by processing data from other areas of the business.

"We would like to include data on our trucks, our forklifts and other equipment. Ideally, we would use the system as a one-stop shop solution that can handle all our maintenance management requirements," says Mr Maheshwari.

The Bühler team is already working on improvements and upgrading the software, with the vision of one day pushing the development towards predictive maintenance via the intermediate step called condition-based maintenance, where decisions about maintenance are based on the actual condition of the equipment.

For Roman Inauen, Customer Service Sales Support, Milling Solutions, there are several key elements in this process: "To move one level up from preventive to predictive maintenance we use both historical and live sensor data from machinery and entire plants to make accurate predictions about the status of equipment.

This enables us to comprehensively plan the exchange of parts before costly breakdowns occur. The other key element of this is connectivity."

For Maheshwari and his colleagues at Siemer Milling Company, the potential is huge. "We are keen to build on what we have already achieved with ProPlant," he says. "Collaborating with Bühler team has been very rewarding."